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1. (Amended) One or more computer-readable media having stored thereon a computer program that, when executed by one or more processors of the computer, causes the one or more processors to perform acts including:

identifying a plurality of viewing rays to be used to construct, based on a previously captured mosaic, a view image of a scene represented by the mosaic;

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checking whether each of the plurality of viewing rays coincides with at least a portion of a captured image;

for each viewing ray that coincides with at least a portion of a captured image, selecting the portion of the captured image;

for each viewing ray that does not coincide with at least a portion of a captured image, generating an interpolated portion by interpolating between at least two portions of one or more captured images based on a constant distance to objects in the scene; and

combining the selected and interpolated portions to generate the view image.

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8. (Amended) One or more computer-readable media having stored thereon a computer program that, when executed by one or more processors of the computer, causes the one or more processors to perform acts including:

identifying a plurality of viewing rays to be used to construct a view image of a scene represented by a mosaic;

checking whether each of the plurality of viewing rays coincides with at least a portion of a captured image;

for each viewing ray that coincides with at least a portion of a captured image, selecting the portion of the captured image;

for each viewing ray that does not coincide with at least a portion of a captured image, generating an interpolated portion by interpolating between at least two portions of one or more captured images based on a constant distance to objects in the scene, wherein the constant distance is calculated based on both a first distance between a center of capture rotation and a nearest object of the scene and a second distance between the center of capture rotation and a farthest object of the scene; and

combining the selected and interpolated portions to generate the view image.

11. (Amended) One or more computer-readable media having stored thereon a computer program that, when executed by one or more processors of the computer, causes the one or more processors to perform acts including:

identifying a plurality of viewing rays to be used to construct a view image of a scene represented by a set of concentric circle mosaics based on a set of concentric circles;

checking whether each of the plurality of viewing rays coincides with at least a portion of a captured image;

for each viewing ray that coincides with at least a portion of a captured image, selecting the portion of the captured image;

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for each viewing ray that does not coincide with at least a portion of a captured image, generating an interpolated portion by interpolating between at least two portions of one or more captured images based on a constant distance to objects in the scene; and

combining the selected and interpolated portions to generate the view image.

15. (Amended) A method of generating values for a portion of an image of a scene represented by concentric mosaics to be rendered, the method comprising:

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interpolating between at least a portion of each of two or more captured images based on a constant distance to objects in the scene.

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18. (Amended) A method of generating values for a portion of an image of a scene represented by a mosaic to be rendered, the method comprising:

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interpolating between at least a portion of each of two or more captured images based on a constant distance to objects in the scene, wherein the scene is represented by a set of concentric circle mosaics.

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23. (Amended) A method comprising:
generating, from a mosaic and based on a plurality of viewing rays, a plurality of image values for a view of a scene;

using, as a first set of image values for the view, at least a portion of a captured image; and

using, as a second set of image values for the view, interpolated values generated by interpolating between at least two portions of one or more captured images based on a constant distance to objects in the scene.

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28. (Amended) A method comprising:

generating, based on a plurality of viewing rays, a plurality of image values for a view of a scene represented by a set of concentric circle mosaics based on a set of concentric circles;

using, as a first set of image values for the view, at least a portion of a captured image; and

using, as a second set of image values for the view, interpolated values generated by interpolating between at least two portions of one or more captured images based on a constant distance to objects in the scene.

32. (Amended) A system comprising:

an observer interface to receive user input commands and identify a viewpoint and a direction of viewing based on the input commands; and

a view renderer, communicatively coupled to the observer interface, to receive the viewpoint and the direction of viewing, to generate values based on a previously captured mosaic for a portion of an image of a scene represented by the

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mosaic, and to interpolate between at least two captured images based on a constant distance to objects in the scene.

36 35. (Amended) A system comprising:

an observer interface to receive user input commands and identify a viewpoint and a direction of viewing based on the input commands; and

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a view renderer, communicatively coupled to the observer interface, to receive the viewpoint and the direction of viewing, to generate values for a portion of an image of a scene represented by a set of concentric circle mosaics based on a set of concentric circles, and to interpolate between at least two captured images based on a constant distance to objects in the scene.

39. (Amended) One or more computer-readable media having stored thereon a computer program that, when executed by one or more processors of the computer, causes the one or more processors to perform acts including:

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accessing concentric mosaics of a scene that are a sequence of images captured by moving a camera in a path around a point, the sequence of images including a plurality of image data, each having a ray direction associated therewith;

identifying a left viewpoint and a right viewpoint within a circle defined by the movement of the camera around the point;

obtaining left image data from the sequence of images that has a ray direction substantially aligned with the ray direction from the left viewpoint;

obtaining right image data from the sequence of images that has a ray direction substantially aligned with the ray direction from the right viewpoint;

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creating a portion of a left image as seen from the left viewpoint by using the obtained left image data; and

creating a portion of a right image as seen from the right viewpoint by using the obtained right image data.

44. (Amended) A system comprising:

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an observer interface to receive user input commands and identify a viewpoint and viewing direction based on the input commands; and

a view renderer, communicatively coupled to the observer interface, to receive the viewpoint and direction of viewing, and to generate, based on the viewpoint and the direction of viewing, a pair of rendered view images of a scene, wherein the scene is represented by concentric mosaics.

49 48. (Amended) A system comprising:

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an observer interface to receive user input commands and identify a viewpoint and viewing direction based on the input commands; and

a view renderer, communicatively coupled to the observer interface, to receive the viewpoint and direction of viewing, and to generate, based on the

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viewpoint and the direction of viewing, a pair of rendered view images of the scene, wherein the scene is represented by a set of concentric circle mosaics based on a set of concentric circles, wherein the view renderer is further to generate values for a portion of one of the pair of rendered view images by interpolating between at least two captured images based on a constant distance to objects in the scene, and wherein the constant distance is calculated based on both a first distance between a center of the set of concentric circles and a nearest object of the scene and a second distance between the center of the set of concentric circles and a farthest object of the scene.

[Please add the following new claims:]

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58. (New) One or more computer-readable media as recited in claim 1, wherein the identifying comprises:

identifying a plurality of viewing rays to be used to construct, based on previously captured concentric mosaics, a view image of a scene represented by the concentric mosaics.

59. (New) A method as recited in claim 23, wherein the generating comprises:

generating, from concentric mosaics and based on a plurality of viewing rays, a plurality of image values for a view of a scene.

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and

60. (New) A system as recited in claim 32, wherein the view renderer is to generate values based on previously captured concentric mosaics for the portion of the image of the scene represented by the concentric mosaics.
